

# Relationship between religious practice, alcohol use, and psychiatric disorders among pregnant women

Relação entre prática religiosa, uso de álcool e transtornos psiquiátricos em gestantes

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## Abstract

**Background:** Mental health of pregnant and postpartum women is a topic widely discussed in scientific literature. During this period, women are going through major changes in physical, hormonal, psychological and social aspects, and thus become more susceptible to psychic problems. The relationship between health and religiousness is also evident in the literature, however there are no studies examining this relationship among pregnant women. **Objective:** To investigate the relationship between religious practice, prevalence of psychiatric disorders, and alcohol use in pregnant women users of The Brazilian National Health System in Juiz de Fora, Brazil. **Materials and methods:** This is a cross-sectional study, involving 260 pregnant women of Juiz de Fora. Data collection was performed in care centers for pregnant women of the city, using a sociodemographic questionnaire (which included religious practice and religious filiation), the Mini International Neuropsychiatric Interview (MINI), and Alcohol Use Disorders Identification Test (AUDIT). **Results:** Most pregnant women practiced a religion (60.8%). Religious women show a lower frequency ( $p \leq 0.05$ ) of diagnoses of Major Depressive Episode with Melancholic features, Hypomania episode, current Panic disorder with Agoraphobia, current Social Anxiety disorder, and Post-traumatic stress disorder. In the diagnosis of abuse of one or more psychoactive substances, there was a tendency to lower prevalence in the groups of religious women ( $p = 0,057$ ). **Discussion:** It was observed in this study, that the religious women tend to have lower rates of mood disorders and anxiety disorders than pregnant women that do not practice their religion.

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**Keywords:** Pregnancy, religion, alcohol, Single Health System.

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## Resumo

**Contexto:** A saúde mental de gestantes é bastante discutida na literatura científica. Nesse período, a mulher passa por alterações físicas, hormonais, psicológicas e sociais e torna-se mais suscetível a problemas psíquicos. Há carência de estudos abordando a relação entre saúde mental e religiosidade nessa população. **Objetivo:** Investigar a relação entre prática religiosa, prevalência de diagnósticos psiquiátricos e consumo alcoólico em gestantes de Juiz de Fora. **Material e métodos:** Estudo transversal envolvendo 260 gestantes acompanhadas em Centros de Atendimento a gestantes de Juiz de Fora, utilizando-se um questionário sociodemográfico (incluindo filiação e prática religiosa), o Mini International Neuropsychiatric Interview e o Alcohol Use Disorders Identification Test (AUDIT). **Resultados:** A maioria das gestantes era praticante de religião (60,8%). As gestantes praticantes apresentavam menor frequência ( $p \leq 0,05$ ) de Episódio Depressivo Maior com características Melancólicas, Episódio Hipomaniaco, Transtorno de Pânico com Agorafobia Atual, Fobia Social Atual e Transtorno do Estresse Pós-traumático. Em relação ao diagnóstico de Abuso de uma ou mais substâncias psicoativas, houve uma tendência à menor prevalência nos grupos de gestantes religiosas praticantes ( $p = 0,057$ ). **Conclusões:** Observou-se que as praticantes tendem a apresentar menores taxas de transtornos de humor e transtornos ansiosos que as gestantes não praticantes de religiosidade.

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**Palavras-chave:** Gravidez, religião, álcool, Sistema Único de Saúde.

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## Introduction

Mental health of pregnant and postpartum women is a subject widely discussed in scientific literature, because during these periods, women go through physical, hormonal, psychological and social changes<sup>1,2</sup>, thus it is necessary a greater care with them at these times to prevent future difficulties for them, and for the care with the baby. According to Luis and Oliveira<sup>3</sup>, these disorders can range from transient benign to serious situations that can result in

irreparable harm to the pregnant woman, to the baby and even to the relationship with their partner.

Depression is one of the most studied emotional disorder in pregnancy<sup>1,4-6</sup> its prevalence is up to 20.4% to pregnant adults<sup>1</sup> and 20.8% of adolescents ones<sup>4</sup>. Among adolescents, depression was associated with suicidal ideation in 16.7% of them<sup>4</sup>.

According to Steward<sup>7</sup>, depression is the main cause of dysfunctions in women between 18 and 44 years old, so it is understandable the high rates of depression among pregnant women, who gener-

ally are in this age group. Pregnant women who are depressed, are more susceptible to nutritional, sleep, and hygiene problems and very often they become involved with substances such as alcohol and tobacco, which affect their health and that can bring irreversible problems to the fetus. Also, they have worse adherence to prenatal care and medical recommendations and the probability of attacking their own integrity or even commit suicide increases<sup>7</sup>. Anxiety disorders are also present during pregnancy. A survey with pregnant women<sup>5</sup> showed that 23.1% of them portrayed anxiety symptoms, and 1.9% of them were diagnosed with Generalized Anxiety Disorder (GAD)<sup>8</sup>. Kessler *et al.*<sup>9</sup> have found a prevalence of GAD of 3.1%.

Alcohol consumption is a major issue for Public Health in general, in the case of its consumption by pregnant women, it needs to get more attention, since alcohol intake may produce devastating effects to them, to their baby's health, and to destabilize the integrity of mother-baby relationship<sup>10</sup>. A survey in a philanthropic maternity hospital in Sao Paulo found that 66.3% of the mothers did not consume alcohol, 17.8% consumed alcohol throughout pregnancy and 15.9% had drunk until the confirmation of pregnancy. In the same study it was found that women knew the risks of drinking alcohol during pregnancy and it was found a rate of 84.5% who believe that no alcohol should be consumed during pregnancy and that is common the relationship between emotional problems and alcohol consumption<sup>11,12</sup>. This suggests that although most women have knowledge about the harmful effects of alcohol use during pregnancy, a considerable number use or used these substances during this period.

Religiosity/Spirituality has been identified as an important protective factor for health; in this sense, a large number of studies have examined the possible link between religiosity and mental health, and most of these, points to a positive relationship between them.

The definitions of Religiosity and Spirituality are numerous and there is no scientific consensus about it. Moreira-Almeida *et al.*<sup>13</sup> and Koenig *et al.*<sup>14</sup> distinguish them saying that Religiosity is an organized system of beliefs, practices, rituals, and symbols designed to facilitate a rapprochement with the sacred and that Spirituality is a personal way to find answers to ultimate questions about meaning of life, the relationship with the sacred, and that may or may not lead to the development of religious rituals and the formation of communities.

Moreira-Almeida *et al.*<sup>13</sup> and Dalgarrondo<sup>15</sup> reviewed the literature available and found that people more religious tend to have higher psychological well-being and lower prevalence of depression, substance use, and suicidal ideation. Dalgarrondo<sup>15</sup> analyzed the various mechanisms of how religious involvement may impact positively on mental health, defending the possibility of a set of phenomena acting in synergy: social support from religious groups, belief system that provides meaning to life and suffering, behaviors and encouraging healthy lifestyles.

Most studies indicate that religious beliefs and practices are also associated with better physical health (heart disease, blood pressure, stroke, immune and neuroendocrine functions, diseases, physical weakness, cancer, and mortality)<sup>15,16</sup>.

From the information showed above and the lack of studies in the scientific literature addressing the impact of religion on mental health of pregnant women, this study aimed to determine if there is a relationship between religious practice, psychiatric disorders and alcohol consumption among pregnant users of the Brazilian National Health System of Juiz de Fora/Minas Gerais (SUS/MG).

## Material and methods

This is a cross-sectional study related to a survey entitled "Longitudinal Study about Use of Alcohol and Psychosocial Aspects of Pregnancy", coordinated by The Center of Research in Social Psychology and Public Health (PoPSS) of the Department of Psychology at the Federal University of Juiz de Fora (UFJF) in collaboration with

the Center for Clinical Research in Psychiatry and Psychopathology, Department of Psychiatry and Medical Psychology, Faculty of Medicine, University of Sao Paulo, Ribeirao Preto and it had financial support from the National Council for Research (CNPq), Case n° 400360/2006-3.

## Instruments

For this study, we used the following instruments:

1. Mini International Neuropsychiatric Interview (MINI), developed by Sheehan *et al.*<sup>17</sup>, translated and validated to Portuguese by Amorim<sup>18</sup>. It is a structured diagnostic interview based on the diagnostic criteria of major psychiatric disorders of Axis I of DSM-IV<sup>19</sup>.
2. Alcohol Use Disorders Identification Test (AUDIT), developed by the World Health Organization (WHO)<sup>20</sup>, translated and validated to Portuguese in 2003<sup>21</sup> which aims to identify alcohol risk consumption, alcohol abuse, and alcohol dependence. It has 10 questions that assess alcohol consumption in the last 12 months<sup>22</sup>. In this study we chose to question the consumption of alcohol during pregnancy period<sup>23</sup>. Summing the scores (maximum 40), AUDIT identifies in the general population, the use of low risk (between 0 and 7 points), use of risk (between 8 and 15 points), harmful use (between 16 and 19 points) and symptoms of dependence (above 20 points). It is usually considered 8 as the cutoff point for risk alcohol use, but for the present study, as the sample was pregnant, and it is recommended to abstain of alcohol throughout the gestational period<sup>19,23</sup>, we adopted the cutoff point for use risk as being equal or more than 1. Socio-demographic Questionnaire: age, self-referred skin color, marital status, educational level, current employment situation, family income, data from the current pregnancy, family planning, religious affiliation, and religious practice.
3. Religious practice was assessed by the question whether the woman had religion, what is her religion and if she practiced this religion or not.

The data were organized in terms of religion declared and they were divided in two groups: practitioners (regardless of religion) and non-practitioners (including those declared as no religion).

## Participants and procedures

It was interviewed 260 pregnant women between 10/25/2006 and 5/19/2008, in institutions of care for pregnant women in Juiz de Fora. Initially, it was done a survey of institutions which provide care to pregnant women in the city (pre-natal groups, monitoring, etc.). They were selected by convenience the institutions that had a greater number of visits of pregnant women and easier access by the interviewers. It was done a contact with the responsible person for the institutions to get the consent to carry out the research.

Before the data collection it was carried out a training of interviewers (psychology students of UFJF). It was also conducted a pilot study where it was raised the major difficulties in applying the instruments and it was made the corrections of methodological problems.

To participate of the study, pregnant women who were in the third trimester of pregnancy, counting from the last menstrual period, and who were taking prenatal care at health institutions linked to SUS (that provides free health assistance for all Brazilian citizens, but takes care basically of low income patients), were approached by interviewers while waiting for the appointment and, after demonstrating their agreement by the Informed Consent Form, as determined by the Ethics in Research (CEP) UFJF they were taken to answer the interview.

The project was approved by the Committee of Ethics in Research (CEP), Protocol 720.026.2006.

## Analysis

It was used for data analysis the software SPSS (Statistical Package for Social Science) version 15.0. Statistics Descriptive Analysis were used for the socio-demographic variables. For categorical variables it was used the Chi-square Test to the comparison of the distribution of frequencies between the groups. The level of significance was 95% ( $p \leq 0.05$ ).

## Results

The average age of the women surveyed was 27 years old (minimum 15, maximum 45, Standard Deviation (SD) = 6.35), average gestational age of 33 weeks (minimum 20 weeks, 42 weeks maximum, SD = 4.4).

Most of the women identified themselves as white. Most were married or cohabitating; unmarried or separated women totaled 31.2% and one pregnant was widow. About education level, the majority of women had high school level. The level of family income concentrated from 1 to 5 Brazilian minimum wage (that is around US\$ 270). Most women were inactive. Housewives and students were considered in active employment, due to the regularity which such activities are practiced (daily activities) and pooled with those who work regularly totaled 40.6% of the sample. A pregnant woman was retired and 6.9% of them were on leave for reasons of health treatment (Table 1).

Regarding religious practices, the majority of the sample had a religious affiliation (Table 2) and 60.8% said that they practice the religion of their belief. Pregnant women who declared no religion were grouped in category "non-practicing". Therefore, in this category we have 83 non-practitioners and 19 who have declared "no religion", totalizing 102 pregnant women in the category "non-practicing".

As described in the methods, it was adopted in AUDIT the cut-off point  $\geq 1$  to categorize the risk use of alcohol for pregnant women. In addition, we used to analyze the data, the sum of the questions from 1 to 8 since the objective of this study was to evaluate the use of alcohol during pregnancy and questions 9 and 10 ask about lifetime use (Board 1).

In MINI the most prevalent disorder was Major Depression. The prevalence of Suicide risk was 15.4%. We found a percentage of 11.2 for the diagnosis of Generalized Anxiety Disorder and 10% of

**Table 1.** Sample characteristics regarding the socio-demographic data

		Frequency	%
Skin color (self-reported)	White	100	38,45
	Black	94	36,15
	Biracial	66	25,40
	Total	260	100,00
Marital status	Married/cohabitating	178	68,5
	Single/separated	81	31,2
	Widow	1	0,4
	Total	260	100,0
Education level	Until 8 years	122	46,9
	More than 9 years	138	53,1
	Total	260	100,0
Family income	Less than 1 minimum wage	69	26,5
	From 1 to 5 minimum wage	170	65,4
	More than 5 minimum wage	13	5,0
	Unreported	8	3,1
	Total	260	100,0
Employment situation	Active	105	40,4
	Inactive	154	59,2
	Unreported	1	0,4
	Total	260	100

**Table 2.** Characterization of the sample according to religiosity

	Frequency	%	Practitioners membership (%)
Catholic	157	60,4	54,1
Protestant Pentecostal	53	20,4	86,8
No religion	19	7,3	-
Tradicional Protestant	10	3,8	80,0
Spiritism	10	3,8	90,0
Other	8	3,1	87,5
Jew	3	1,2	100,0
Total	260	100,0	-

**Board 1.** Relationship between alcohol use of risk (AUDIT) and religious practice

AUDIT		Religiosity		Total (%)
		Practitioner (%)	Non practicing (%)	
Alcohol use of risk	Negative	47,7	27,7	75,4
	Positive ( $\geq 1$ )	13,1	11,5	24,6
Total		60,8	39,2	100,0

$p = 0,149$ .

Psychotic Syndrome (whole life). It is interesting to note that alcohol abuse was identified in 6.6% of pregnant women and 6.5% of the surveyed were diagnosed with Hippomaniac Episode. Regarding the risk of suicide, it was found a prevalence of 15.4%, being 9.2% slight risk, 0.8% moderate risk, and 5.4% high risk (Table 3).

At table 3, we can observe the relationship between the number of diagnoses made by MINI and the categories (Practitioner/non-practicing). We found statistically significant difference between the groups in the diagnoses of Major Depressive Episode with Melancholic Features, Hippomaniac Episode, Panic Disorder with Agoraphobia, Social Phobia now and Posttraumatic Stress Disorder. In the diagnosis of abuse of one or more psychoactive substances, there was a trend toward statistical significance ( $p = 0.057$ ). For the other relationships (Current and Past Major Depressive, Dysthymia, Suicide Risk, Panic Disorder, Obsessive Compulsive Disorder, Addiction and abuse of alcohol and other psychoactive substances, Psychotic Syndrome, Anorexia, Bulimia, Generalized Anxiety Disorder and Anti Social Personality Disorder) there were no statistically significant results.

In Audit, as shown in table 1, there were a total of 64 pregnant women considered at-risk regarding to alcohol consumption, 34 were in the group of non-practitioners and 30 consider themselves practitioners of their religion. Therefore, there was no statistically significant difference between them ( $p = 0.149$ ).

## Discussion

The pattern of religious affiliation in this study was similar to the Brazilian census released by the IBGE in 2000<sup>24</sup>.

The safe amount of alcohol that a pregnant woman can consume is not defined in the literature, therefore it is recommended total abstinence throughout pregnancy<sup>23</sup>. The use and abuse of alcohol during pregnancy should be cause for investigation and intervention, because the abuse of this substance is associated with restriction of growth and bad fetal development, baby's cognitive impairment, increased morbidity and mortality, and other disorders such as Fetal Alcohol Spectrum Disorder<sup>4</sup> which is an irreversible condition characterized by craniofacial anomalies, growth deficiency, disorders of the Central Nervous System and several associated malformations. Moreover, the consumption of alcohol during pregnancy is related to the increase in the number of abortions, low birth weight of the baby,

**Table 3.** Relationship between psychiatric diagnoses (MINI) and religious practice

Diagnose (MINI)	Practitioner (%)	Non-Practicing (%)	P*	Total of the sample with positive diagnoses (%)
Current Major Depressive Episode	19,0	27,5	0,109	22,3
Past Major Depressive Episode	13,4	11,1	0,594	12,3
Current Depressive Episode with Melancholic Features	10,2	18,8	0,048*	13,4
Current Dysthymia	1,9	2,0	0,945	1,9
Risk of Suicide	12,1	20,6	0,065	15,4
Hypomanic Episode	3,9	10,8	0,029*	6,5
Current Panic Disorder	0,6	2,0	0,334	1,2
Current Panic Disorder with Agoraphobia	0	2,9	0,031*	1,2
Current Agoraphobia without Panic	17,9	20,6	0,597	18,8
Current Social Phobia	3,2	8,8	0,048*	5,4
Current Obsessive Compulsive Disorder	1,9	5,9	0,088	3,5
Current Post Traumatic Stress Disorder	0,6	6,9	0,005*	3,1
Alcohol Dependence	0,8	1,5	0,164	2,3
Current Alcohol Abuse	5,0	11,1	0,084	6,6
Dependence of one or more psychoactive substances	0,6	2,9	0,146	1,5
Abuse of one or more psychoactive substances	0,6	4,1	0,057	1,9
Psychotic Syndrome (whole-life)	8,9	11,9	0,440	10,0
Current Anorexia	1,3	4,0	0,159	2,3
Current Bulimia	0,6	1,0	0,758	0,8
Current Generalized Anxiety Disorder	8,3	15,7	0,065	11,2
Anti Social Personality Disorder (whole life)	0	1,0	0,214	0,4

and the factors that can compromise the child-bearing, as unstuck of placenta, preterm delivery, and risk of infections<sup>25</sup>.

Fetal susceptibility to alcohol is modulated by the amount ingested by the mother, time of exposure, nutritional status and the capacity of maternal and fetal metabolism. Thus, the prevalence found in this study (24.6%), can be considered as very high risk<sup>26</sup>. Moreover, according to the report on world health<sup>27</sup> quoted in Galassi *et al.*<sup>28</sup> disorders related to alcohol abuse takes the second position (5.5%) among the 20 diseases that entail more years lived with disability in people between 15 and 44 years old.

The findings of this study confirm the reviews carried out by Moreira-Almeida *et al.*<sup>13</sup> and Dalgarrondo<sup>15</sup> because the studies correlating religiousness and mental health show that, in general, individuals who are involved with religious activities, have greater psychological well-being and lower prevalence of mood disorders, anxiety disorders, use, abuse or dependence of alcohol and other substances, suicidal ideation and suicidal behaviors. As shown in table 3, it was found an inverse relationship of religious practice with psychiatric disorders. It is important to emphasize that some results may not have reached statistical significance due to the few cases of the disorder in the sample, which weakens the statistical power to find change, if it exists.

Different from Dalgarrondo<sup>15</sup> and Sanches *et al.*<sup>23</sup>, it was not found in this study a statistically significant difference when comparing groups of people practicing and not practicing in AUDIT for use of risk.

We found a high rate of women diagnosed with Psychotic Syndrome – whole life (10.00%), this result may have been due to the difficulty of insight into the MINI diagnostic criteria for this disorder because the diagnosis of this syndrome is complex and scrutiny.

The percentage of pregnant women at risk of suicide (during life) was very high. Based on the manual for physicians prepared by the World Health Organization<sup>29</sup> suicide is one of the top three causes of death at the age from 15 to 35 years old, this age group represents the age of the women surveyed, and is more common in people who have some kind of mental distress, mood disorders, and anxiety disorders, which in turn, are very present in the population studied.

This study has methodological limitations regarding the criterion for definition of practicing or not practicing any religion by a simple question. We know the complexity involved in the evaluation of religious practice. Authors argue that more important than which religion a person professes, is the degree and type of involvement with their religious affiliation<sup>30</sup>. In this respect our study does not address fully the assessment in a better understanding on the concept of “religion” but an assessment of religious practice self-reported, these limitations that may have influenced the results of this study. It is suggested that in other studies these aspects are considered.

Still, the information presented in this article is relevant given that this is an original study, an unspoiled area with few research data available. The data suggest that a considerable number of low income women present psychiatric disorders and alcohol consumption during pregnancy. It is important to consider the influence of such disorders on the maternal and child health and its relevance in terms of prevention, both for the health of the mother and for complications in the baby’s development. Knowledge about the relationship between religious practices and mental health is recognized as an important strategy to protect health.

It must be said that this is a correlational study and it did not aim to be a population survey. It is hoped that other studies extend beyond the data presented here.

### Final considerations

It was not found on the scientific literature previous studies that correlate alcohol use, religious practice and psychiatric disorders among pregnant women. Data from this study suggest that a considerable number of women filled positively to queries for mental disorders and alcohol consumption during pregnancy, which can cause disorders on maternal and child health and future problems for the baby. It should also emphasize the importance of relationships in this study regarding to prevention and health promotion. Early detection of disturbances in the mental health of pregnant women can minimize obstetric complications and a better quality of life of mothers and children.

Also, it was found that religious women show a lower frequency ( $p \leq 0.05$ ) of diagnoses of Major Depressive Episode with Melancholic features, Hypomania episode, current Panic disorder with Agoraphobia, current Social Anxiety disorder, and Post-traumatic stress disorder, suggesting that they have a better Mental Health than pregnant women that do not practice their religion.

It is hoped that other studies deepen the data presented here and more information about this subject are revealed.

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